

U.S. Serial No: 10/608,723
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LISTING OF THE CLAIMS

1. (Currently Amended) A method for treating a human subject afflicted with atrial tachyarrhythmia comprising administering to the human subject a therapeutically effective amount of an agent, which ~~inhibits protein kinase A (PKA) phosphorylation of~~ restores normal gating to a type 2 ryanodine receptor (RyR2) channel in the human subject's heart, thereby treating the human subject, wherein the agent is a derivative of 1,4-benzothiazepine.
2. (Canceled) The method of claim 1, wherein PKA phosphorylation of the RyR2 receptor causes dissociation of a FKBP12.6 ~~binding protein~~ from the RyR2 receptor.
3. (Original) The method of claim 1, wherein the atrial tachyarrhythmia is an atrial fibrillation or a supraventricular tachyarrhythmia.
4. (Currently Amended) A method for treating a human subject afflicted with atrial tachyarrhythmia comprising administering to the human subject a therapeutically effective amount of an agent, which inhibits dissociation of a FKBP12.6 ~~binding protein~~ from a type 2 ryanodine (RyR2) receptor in the human subject's heart, thereby treating the human subject.
5. (Original) The method of claim 4, wherein the atrial tachyarrhythmia is an atrial fibrillation or a supraventricular tachyarrhythmia.
6. (Currently Amended) The method of claim 4, wherein the agent is ~~FTV-519~~ a derivative of 1,4-benzothiazepine.

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7. (Withdrawn) A method for treating a subject afflicted with atrial tachyarrhythmia comprising administering to the subject a therapeutically effective amount of an agent which mimics binding of a FKBP12.6 binding protein to a type 2 ryanodine receptor (RyR2) of the subject's heart, thereby treating the subject.
8. (Withdrawn) The method of claim 7, wherein the atrial tachyarrhythmia is a fibrillation or an atrial ventricular tachyarrhythmia.
9. (Withdrawn) An article of manufacture comprising (i) a packaging material having therein an agent which inhibits protein kinase A (PKA) phosphorylation of a type 2 ryanodine receptor (RyR2) and (ii) a label indicating a use for the agent in treating a subject afflicted with atrial tachyarrhythmia.
10. (Withdrawn) An article of manufacture comprising (i) a packaging material having therein an agent which inhibits dissociation of a FKBP12.6 binding protein from a type 2 ryanodine receptor (RyR2) and (ii) a label indicating a use for the agent in treating a subject afflicted with atrial tachyarrhythmia.
11. (Withdrawn) The article of manufacture of claim 10, wherein the agent is JTV-519.
12. (Withdrawn) An article of manufacture comprising (i) a packaging material having therein an agent which mimics binding of a FKBP12.6 binding protein

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to a type 2 ryanodine receptor (RyR2) and (ii) a label indicating a use for the agent in treating a subject afflicted with atrial tachyarrhythmia.

13. (Currently Amended) A method for inhibiting the onset of atrial tachyarrhythmia in a human subject comprising administering to the human subject a prophylactically effective amount of an agent, which ~~inhibits protein kinase A (PKA) phosphorylation of~~ restores normal gating to a type 2 ryanodine receptor (RyR2) in the human subject's heart, thereby inhibiting the onset of an atrial tachyarrhythmia in the human subject, wherein the agent is a derivative of 1,4-benzothiazepine.
14. (Canceled) The method of claim 13, wherein PKA phosphorylation of the RyR2 receptor causes dissociation of a FKBP12.6 ~~binding protein~~ from the RyR2 receptor.
15. (Original) The method of claim 13, wherein the atrial tachyarrhythmia is an atrial fibrillation or a supraventricular tachyarrhythmia.
16. (Currently Amended) A method for inhibiting the onset of atrial tachyarrhythmia in a human subject comprising administering to the human subject a prophylactically effective amount of an agent, which inhibits dissociation of a FKBP12.6 ~~binding protein~~ from a type 2 ryanodine (RyR2) receptor in the human subject's heart, thereby inhibiting the onset of atrial tachyarrhythmia in the human subject.

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17. (Original) The method of claim 16, wherein the atrial tachyarrhythmia is an atrial fibrillation or a supraventricular tachyarrhythmia.
18. (Currently Amended) The method of claim 16, wherein the agent is ~~JTV-519~~ a derivative of 1,4-benzothiazepine.
19. (Withdrawn) A method for inhibiting the onset of atrial tachyarrhythmia in a subject comprising administering to the subject a prophylactically effective amount of an agent which mimics binding of a FKBP12.6 binding protein to a type 2 ryanodine receptor (RyR2) of the subject's heart, thereby inhibiting the onset of atrial tachyarrhythmia in the subject.
20. (Withdrawn) The method of claim 19, wherein the atrial tachyarrhythmia is an atrial fibrillation or a supraventricular tachyarrhythmia.
21. (Withdrawn) An article of manufacture comprising (i) a packaging material having therein an agent which inhibits protein kinase A (PKA) phosphorylation of a type 2 ryanodine receptor (RyR2) and (ii) a label indicating a use for the agent in inhibiting the onset of atrial tachyarrhythmia in a subject.
22. (Withdrawn) An article of manufacture comprising (i) a packaging material having therein an agent which inhibits dissociation of a FKBP12.6 binding protein from a type 2 ryanodine receptor (RyR2) and (ii) a label indicating a use for the agent in inhibiting the onset of atrial tachyarrhythmia in a subject.

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23. (Withdrawn) The article of manufacture of claim 22, wherein the agent is JTV-519.
24. (Withdrawn) An article of manufacture comprising (i) a packaging material having therein an agent which mimics binding of a FKBP12.6 binding protein to a type 2 ryanodine receptor (RyR2) and (ii) a label indicating a use for the agent in inhibiting the onset of atrial tachyarrhythmia in a subject.
25. (New) The method of claim 1, wherein the amount of an agent is selected from the concentration range of about 100 nM to about 1000 nM.
26. (New) The method of claim 1, wherein administering is performed topically, intravenously, pericardially, orally, subcutaneously, or intraperitoneally.
27. (New) The method of claim 6, wherein the agent is JTV-519.
28. (New) The method of claim 4, wherein the amount of an agent is selected from the concentration range of about 100 nM to about 1000 nM.
29. (New) The method of claim 4, wherein administering is performed topically, intravenously, pericardially, orally, subcutaneously, or intraperitoneally.
30. (New) The method of claim 18, wherein the agent is JTV-519.
31. (New) The method of claim 16, wherein the amount of an agent is selected from the concentration range of about 100 nM to about 1000 nM.
32. (New) The method of claim 16, wherein administering is performed topically, intravenously, pericardially, orally, subcutaneously, or intraperitoneally.

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33. (New) A method for treating a human subject afflicted with atrial tachyarrhythmia comprising administering to the human subject a therapeutically effective amount of an agent, which enables FKBP12.6 to bind to PKA-phosphorylated type 2 ryanodine receptor (RyR2) channels in the human subject's heart, thereby treating the human subject, wherein the agent is a derivative of 1,4-benzothiazepine.
34. (New) The method of claim 33, wherein the atrial tachyarrhythmia is an atrial fibrillation or a supraventricular tachyarrhythmia.
35. (New) The method of claim 33, wherein the amount of an agent is selected from the concentration range of about 100 nM to about 1000 nM.
36. (New) The method of claim 33, wherein administering is performed topically, intravenously, pericardially, orally, subcutaneously, or intraperitoneally.
37. (New) The method of claim 33, wherein the agent is JTV-519.
38. (New) A method for inhibiting the onset of atrial tachyarrhythmia in a human subject comprising administering to the human subject a prophylactically effective amount of an agent, which enables FKBP12.6 to bind to PKA-phosphorylated type 2 ryanodine receptor (RyR2) channels in the human subject's heart, thereby inhibiting the onset of an atrial tachyarrhythmia in the human subject, wherein the agent is a derivative of 1,4-benzothiazepine.
39. (New) The method of claim 38, wherein the atrial tachyarrhythmia is an atrial fibrillation or a supraventricular tachyarrhythmia.

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40. (New) The method of claim 38, wherein the amount of an agent is selected from the concentration range of about 100 nM to about 1000 nM.
41. (New) The method of claim 38, wherein administering is performed topically, intravenously, pericardially, orally, subcutaneously, or intraperitoneally.
42. (New) The method of claim 38, wherein the agent is JTV-519.